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(54) Title: DATA RECORDING USING CARBON NANOTUBE ELECTRON SOURCES

(57) Abstract: A method and apparatus (300) for data recording using carbon nanotube electron sources (320) is described. The present invention relates to using a Carbon Nanotube as a source for an electron beam (350) suitable for real-time writing of data to a storage medium (390). Carbon nanotube electron emitters are used as electron sources for recording data marks onto various recording media. In one embodiment, the invention is an apparatus. The apparatus includes a substrate (310). The apparatus further includes a carbon nanotube mounted on the substrate. The apparatus also includes an extraction electrode mounted in proximity to a tip of the carbon nanotube.



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# INTERNATIONAL SEARCH REPORT

International application No.

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC: **D01F 9/00**( 2006.01);**H01J 9/00**( 2006.01);**G11C 11/00**( 2006.01);**G06F 11/00**( 2006.01)

USPC: 365/151;445/24;428/367;714/701

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 365/151; 445/24; 428/367; 714/701

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
East, West

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
|------------|--|-----------------------|
| X          | US 6,312,303 B1 (Yaniv et al.) 6 November 2001 (6.11.2001), col. 1, lines 11-17 and col. 2, lines 51-55 and col. 4, lines 1-9. | 1-35                  |
| A          | US 6,361,861 B2 (Gao et al.) 26 March 2002 (26.03.2002), column 3, lines 23-50 and abstract.                                   | 1-35                  |

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Further documents are listed in the continuation of Box C.

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See patent family annex.

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